SUMMARY

- Asthma is the fourth most prevalent chronic condition in adulthood. About 150,000 Iowa adults (6.4 percent of the population 18 years and older) have asthma. Iowa adults with the highest asthma prevalence rates are:
    - Women
    - Low income
    - High School dropouts
    - Poor overall health
    - Current and former smokers
    - Obese
- About half of all adults with asthma had an asthma attack in the past 12 months.
- About 30 percent of adults with asthma sought urgent or emergency care to treat uncontrolled asthma during the past 12 months, including 12 percent who visited a hospital emergency department.
- Estimates of the portion of Iowa children with asthma vary greatly. Iowa Behavioral Risk Factor Surveillance System (BRFSS) estimates place the rate of asthma at 5.3 percent (n=36,100 in 2003), while data from the 2005 Iowa Youth Risk Behavior Survey (YRBS) estimate 14.4 percent (n=26,000) in 2005 High School youth.
- During the past 25 years, Iowa has had an average of 53 deaths from asthma per year. For the years 2000-2004, there were 44 deaths per year. For every death from asthma, there are about two more deaths in which asthma is listed as a contributing cause.
- Females are about twice as likely to die from asthma as are men.
- African-Americans are about three times more likely to die from asthma than Caucasians, but they account for only about three deaths each year.
- About 2,400 hospitalizations each year are directly attributable to asthma, another 10,000 hospital discharge records asthma as a secondary cause.
- While race is missing for 21 percent of inpatient discharge records, based on race data available, African-Americans are estimated to be two to three times more likely to be hospitalized from asthma than Caucasians.
- Persons older than 65 years and younger than 5 years of age have higher hospitalization rates than those 5 to 65 years of age.
- Among children, boys are more likely to be hospitalized than girls. Two-thirds of hospitalizations of children 0 to 4 years of age are boys.

COSTS OF ASTHMA

Direct and indirect costs of asthma in Iowa are estimated to be between $144 and $154 million per year, or about $759 per person with asthma.

COUNT OF INPATIENT HOSPITALIZATIONS BY COUNTY ALL AGES:

Count of Inpatient Hospitalizations from Asthma (Asthma Primary Discharge Diagnosis) and Ranking of Counts by Patient County of Residence, All Ages
1995-1999 Average Annualized Count, Iowa State Inpatient Database

Risk Classification	Rank	County of Residence	Hospitalizations #/Yr	%
MOST # OF HOSPITALIZATIONS	1	Polk	475.6	17.1%
	2	Scott	206.4	7.4%
	3	Linn	177.2	6.4%
	4	Black Hawk	169.8	6.1%
	5	Woodbury	93.2	3.3%
	6	Lee	86.2	3.1%
	7	Webster	85.0	3.0%
	8	Johnson	70.8	2.5%
	9	Dubuque	65.6	2.4%
	10	Clinton	61.8	2.2%
	11	Des Moines	54.4	2.0%
	12	Pottawattamie	46.2	1.7%
	13	Marshall	43.6	1.6%
	14	Cerro Gordo	43.0	1.5%
	15	Hamilton	42.8	1.5%
	16	Wapello	41.4	1.5%
	17	Story	38.4	1.4%
	18	Jasper	37.2	1.3%
	19	Marion	33.8	1.2%
	20	Floyd	32.2	1.2%
	21	Warren	29.0	1.0%
	22	Muscatine	28.8	1.0%
	23	Poweshiek	23.6	0.8%
	24	Montgomery	23.2	0.8%
	25	Boone	23.0	0.8%
MORE THAN STATE MEDIAN #	26	Buchanan	20.8	0.7%
	27	Hardin	20.6	0.7%
	28	Jones	20.2	0.7%
	29	Benton	19.8	0.7%
	30	Union	19.2	0.7%
	31	Plymouth	18.8	0.7%
	32	Dallas	18.6	0.7%
	33	Page	18.4	0.7%
	34	Tama	18.2	0.7%
	35	Fayette	17.0	0.6%
	36	Sioux	16.6	0.6%
	37	Henry	16.2	0.6%
	38	Appanoose	16.0	0.6%
	39	Cedar	15.0	0.5%
	40	Bremer	14.8	0.5%
	41	Clay	14.6	0.5%
	42	Buena Vista	14.4	0.5%
	43	Mills	14.2	0.5%
	44	Washington	13.2	0.5%
	45	Shelby	13.0	0.5%
	46	Chickasaw	12.8	0.5%
	47	Cass	12.6	0.5%
	48	Crawford	12.6	0.5%
	49	Emmet	12.2	0.4%
	50	Butler	12.2	0.4%

Mean * County Count 28.2

Median * County Count 12.2

Risk Classification	Rank	County of Residence	Hospitalizations #/Yr	%
FEWER THAN MEDIAN #	51	Jefferson	12.0	0.4%
	52	Mahaska	11.8	0.4%
	53	O'Brien	11.6	0.4%
	54	Wright	11.4	0.4%
	55	Cherokee	11.4	0.4%
	56	Jackson	11.0	0.4%
	57	Dickinson	10.6	0.4%
	58	Iowa	10.4	0.4%
	59	Delaware	10.2	0.4%
	60	Humboldt	10.2	0.4%
	61	Monona	10.2	0.4%
	62	Calhoun	9.8	0.4%
	63	Harrison	9.6	0.3%
	64	Clayton	9.6	0.3%
	65	Sac	9.2	0.3%
	66	Allamakee	9.0	0.3%
	67	Franklin	9.0	0.3%
	68	Greene	8.8	0.3%
	69	Hancock	8.6	0.3%
	70	Louisa	7.6	0.3%
	71	Lucas	7.0	0.3%
	72	Guthrie	7.0	0.3%
	73	Keokuk	7.0	0.3%
	74	Kossuth	6.8	0.2%
	75	Mitchell	6.8	0.2%
LEAST # OF HOSPITALIZATIONS	76	Pocahontas	6.6	0.2%
	77	Van Buren	6.6	0.2%
	78	Wayne	6.4	0.2%
	79	Winneshiek	6.4	0.2%
	80	Adams	6.0	0.2%
	81	Carroll	6.0	0.2%
	82	Fremont	5.6	0.2%
	83	Adair	5.6	0.2%
	84	Madison	5.6	0.2%
	85	Winnebago	5.2	0.2%
	86	Taylor	5.2	0.2%
	87	Monroe	5.2	0.2%
	88	Clarke	5.0	0.2%
	89	Lyon	4.2	0.2%
	90	Palo Alto	4.2	0.2%
	91	Grundy	4.0	0.1%
	92	Audubon	3.8	0.1%
	93	Davis	3.8	0.1%
	94	Decatur	3.4	0.1%
	95	Ida	3.2	0.1%
	96	Osceola	3.0	0.1%
	97	Ringgold	2.0	0.1%
	98	Worth	1.8	0.1%
	99	Howard	1.4	0.1%
Average Annual: State of Iowa			2,787	100%

State Statistics:	Mean	28.2	Range of Counts	(1 - 476)
	Median	12.2		
	+1 Std Dev	85.1		
	-1 Std Dev	0		

*The *median* count of hospitalizations for all Iowa counties is the count above and below which half of all 99 counties' counts fall. The *mean* county count is the *average* count for all 99 counties (i.e., sum of all counties' counts of hospitalizations/99 counties).

Average Annual Count of Inpatient Hospitalizations from Asthma (Asthma Primary Discharge Diagnosis) for Children 0 to 4 Years of Age and Ranking of Counts by Patient County of Residence, 2000-2004 Average, Iowa State Inpatient Database

Risk Classification	Rank	County of Residence	Hospitalizations #/Yr	Hospitalizations %
MOST # OF HOSPITALIZATIONS	1	Polk	70.0	17.5%
	2	Linn	34.2	8.5%
	3	Black Hawk	26.8	6.7%
	4	Scott	26.8	6.7%
	5	Marshall	14.0	3.5%
	6	Webster	13.8	3.5%
	7	Des Moines	12.0	3.0%
	8	Woodbury	11.6	2.9%
	9	Clinton	10.8	2.7%
	10	Lee	10.6	2.7%
	11	Cerro Gordo	8.0	2.0%
	12	Johnson	8.0	2.0%
	13	Dubuque	7.2	1.8%
	14	Pottawattamie	7.0	1.8%
	15	Jasper	6.8	1.7%
	16	Marion	5.8	1.5%
	17	Warren	5.8	1.5%
	18	Story	5.2	1.3%
	19	Tama	5.2	1.3%
	20	Muscatine	5.0	1.3%
	21	Buchanan	4.2	1.1%
	22	Benton	3.4	0.9%
	23	Dallas	3.4	0.9%
	24	Floyd	2.8	0.7%
	25	Jones	2.8	0.7%
MORE THAN MEDIAN #	26	Sioux	2.8	0.7%
	27	Buena Vista	2.6	0.7%
	28	Hamilton	2.6	0.7%
	29	Poweshiek	2.6	0.7%
	30	Crawford	2.4	0.6%
	31	Mills	2.4	0.6%
	32	Page	2.4	0.6%
	33	Boone	2.2	0.6%
	34	Hardin	2.2	0.6%
	35	Plymouth	2.2	0.6%
	36	Wapello	2.2	0.6%
	37	Cedar	2.0	0.5%
	38	Fayette	2.0	0.5%
	39	Humboldt	2.0	0.5%
	40	O'Brien	2.0	0.5%
	41	Chickasaw	1.8	0.5%
	42	Washington	1.8	0.5%
	43	Cherokee	1.6	0.4%
	44	Iowa	1.6	0.4%
	45	Jackson	1.6	0.4%
	46	Wayne	1.6	0.4%
	47	Wright	1.6	0.4%

Mean * County Count: 4

Risk Classification	Rank	County of Residence	Hospitalizations #/Yr	Hospitalizations %	Median * County Count
MEDIAN #	48	Cass	1.4	0.4%	
	49	Dickinson	1.4	0.4%	
	50	Grundy	1.4	0.4%	1.4
	51	Louisa	1.4	0.4%	
	52	Mitchell	1.4	0.4%	
	53	Monona	1.4	0.4%	
	54	Union	1.4	0.4%	
FEWER THAN MEDIAN #	55	Audubon	1.2	0.3%	
	56	Butler	1.2	0.3%	
	57	Clarke	1.2	0.3%	
	58	Clayton	1.2	0.3%	
	59	Decatur	1.2	0.3%	
	60	Keokuk	1.2	0.3%	
	61	Mahaska	1.2	0.3%	
	62	Allamakee	1.0	0.3%	
	63	Calhoun	1.0	0.3%	
	64	Henry	1.0	0.3%	
	65	Kossuth	1.0	0.3%	
	66	Lucas	1.0	0.3%	
	67	Ringgold	1.0	0.3%	
	68	Sac	1.0	0.3%	
	69	Van Buren	1.0	0.3%	
	70	Winnebago	1.0	0.3%	
	71	Winneshiek	1.0	0.3%	
	72	Appanoose	0.8	0.2%	
	73	Carroll	0.8	0.2%	
	74	Greene	0.8	0.2%	
	75	Hancock	0.8	0.2%	
LEAST # OF HOSPITALIZATIONS	76	Jefferson	0.8	0.2%	
	77	Madison	0.8	0.2%	
	78	Palo Alto	0.8	0.2%	
	79	Pocahontas	0.8	0.2%	
	80	Worth	0.8	0.2%	
	81	Adams	0.6	0.2%	
	82	Clay	0.6	0.2%	
	83	Emmet	0.6	0.2%	
	84	Franklin	0.6	0.2%	
	85	Guthrie	0.6	0.2%	
	86	Lyon	0.6	0.2%	
	87	Taylor	0.6	0.2%	
	88	Adair	0.4	0.1%	
	89	Bremer	0.4	0.1%	
	90	Davis	0.4	0.1%	
	91	Delaware	0.4	0.1%	
	92	Monroe	0.4	0.1%	
	93	Montgomery	0.4	0.1%	
	94	Shelby	0.4	0.1%	
	95	Fremont	0.2	0.1%	
	96	Harrison	0.2	0.1%	
	97	Osceola	0.2	0.1%	
	98	Howard	0.0	0.0%	
	99	Ida	0.0	0.0%	
Average Annual: State of Iowa			400	99%	

State Statistics:	Mean	4	Range of Counts	(0 - 70)
	Median	1.4		
	+1 Std Dev	12.7		
	-1 Std Dev	0		

*The *median* count of hospitalizations for all Iowa counties is the count above and below which half of all 99 counties' counts fall. The *mean* county count is the *average* count for all 99 counties (i.e., sum of all counties' counts of hospitalizations/99 counties).

AVERAGE ANNUAL COUNT OF INPATIENT HOSPITALIZATIONS BY COUNT, 5 TO 64 YEARS OF AGE:

Average Annual Count of Inpatient Hospitalizations from Asthma (Asthma Primary Discharge Diagnosis) for Residents 5 to 64 Years of Age and Ranking of Counts by Patient County of Residence, 2000-2004 Average, Iowa State Inpatient Database

Classification	Rank	County of Residence	Hospitalizations #/Yr	%		Classification	Rank	County of Residence	Hospitalizations #/Yr	%
MOST # OF HOSPITALIZATIONS	1	Polk	232.8	15.8%		FEWER THAN MEDIAN #	51	Iowa	6.0	0.4%
	2	Scott	112.6	7.7%			52	Tama	5.6	0.4%
	3	Linn	108.6	7.4%			53	Crawford	5.4	0.4%
	4	Black Hawk	90.4	6.2%			54	Dickinson	5.4	0.4%
	5	Woodbury	65.4	4.5%			55	Harrison	5.4	0.4%
	6	Johnson	43.2	2.9%			56	Lucas	5.4	0.4%
	7	Webster	37.4	2.5%			57	Calhoun	5.2	0.4%
	8	Lee	35.4	2.4%			58	Cherokee	5.2	0.4%
	9	Clinton	34.6	2.4%			59	Guthrie	5.2	0.4%
	10	Pottawattamie	33.8	2.3%			60	Humboldt	5.2	0.4%
	11	Des Moines	30.8	2.1%			61	Jackson	5.2	0.4%
	12	Dubuque	24.4	1.7%			62	Allamakee	5.0	0.3%
	13	Hamilton	22.4	1.5%			63	Louisa	5.0	0.3%
	14	Marshall	21.6	1.5%			64	Emmet	4.8	0.3%
	15	Story	21.4	1.5%			65	Greene	4.8	0.3%
	16	Cerro Gordo	20.6	1.4%			66	O'Brien	4.6	0.3%
	17	Wapello	19.2	1.3%			67	Adams	4.4	0.3%
	18	Floyd	18.0	1.2%			68	Hancock	4.4	0.3%
	19	Boone	16.0	1.1%			69	Fremont	4.0	0.3%
	20	Jasper	15.0	1.0%			70	Franklin	3.8	0.3%
	21	Warren	15.0	1.0%			71	Sac	3.8	0.3%
	22	Montgomery	14.8	1.0%			72	Adair	3.6	0.2%
	23	Muscatine	14.6	1.0%			73	Butler	3.6	0.2%
	24	Poweshiek	14.2	1.0%			74	Carroll	3.6	0.2%
	25	Union	13.6	0.9%			75	Kossuth	3.6	0.2%
MORE THAN MEDIAN #	26	Jones	13.2	0.9%		LEAST # OF HOSPITALIZATIONS	76	Mitchell	3.4	0.2%
	27	Marion	13.0	0.9%			77	Monona	3.4	0.2%
	28	Buchanan	12.2	0.8%			78	Van Buren	3.4	0.2%
	29	Plymouth	11.8	0.8%			79	Keokuk	3.2	0.2%
	30	Benton	11.4	0.8%			80	Madison	3.2	0.2%
	31	Fayette	10.0	0.7%			81	Winnebago	3.0	0.2%
	32	Dallas	9.8	0.7%			82	Clayton	2.8	0.2%
	33	Henry	9.8	0.7%			83	Taylor	2.6	0.2%
	34	Shelby	9.6	0.7%			84	Wayne	2.6	0.2%
	35	Clay	9.4	0.6%			85	Clarke	2.4	0.2%
	36	Page	9.4	0.6%			86	Pocahontas	2.4	0.2%
	37	Mills	9.0	0.6%			87	Davis	2.2	0.2%
	38	Jefferson	8.8	0.6%			88	Ida	2.0	0.1%
	39	Bremer	8.4	0.6%			89	Monroe	2.0	0.1%
	40	Appanoose	8.2	0.6%			90	Palo Alto	2.0	0.1%
	41	Washington	7.8	0.5%			91	Grundy	1.8	0.1%
	42	Chickasaw	7.2	0.5%			92	Osceola	1.8	0.1%
	43	Hardin	7.2	0.5%			93	Winneshiek	1.8	0.1%
	44	Sioux	7.2	0.5%			94	Audubon	1.4	0.1%
	45	Cedar	7.0	0.5%			95	Decatur	1.4	0.1%
	46	Delaware	7.0	0.5%			96	Lyon	1.0	0.1%
	47	Cass	6.6	0.4%			97	Worth	0.8	0.1%
	48	Buena Vista	6.4	0.4%			98	Ringgold	0.6	0.1%
	49	Mahaska	6.2	0.4%			99	Howard	0.4	0.0%
	50	Wright	6.2	0.4%						

Mean County * Count **14.8**

Median * County Count **6.2**

Average Annual: State of Iowa			1,469	99%
State Statistics:	Mean	14.8	Range of Counts	(<1 - 233)
	Median	6.2		
	+1 Std Dev	44.2		
	-1 Std Dev	0		

*The *median* count of hospitalizations for all Iowa counties is the count above and below which half of all 99 counties' counts fall. The *mean* county count is the *average* count for all 99 counties (i.e., sum of all counties' counts of hospitalizations/99 counties).

AVERAGE ANNUAL COUNT OF INPATIENT HOSPITALIZATIONS BY COUNTY AGE 65 YEARS AND OLDER:

Average Annual <u>Count of Inpatient Hospitalizations</u> from Asthma (Asthma Primary Discharge Diagnosis) for <u>Adults Age 65 and Older</u> and Ranking of Counts by Patient County of Residence, <u>2000-2004</u> Average, Iowa State Inpatient Database

Risk Classification	Rank	County of Residence	Hospitalizations # /Yr	%		Risk Classification	Rank	County of Residence	Hospitalizations # /Yr	%	
MOST # OF HOSPITALIZATIONS	1	Polk	49.8	9.6%		MEDIAN #	48	Chickasaw	3.2	0.6%	Median * County Count 3.2
	2	Black Hawk	33.2	6.4%			49	Crawford	3.2	0.6%	
	3	Scott	25.2	4.8%			50	Fayette	3.2	0.6%	
	4	Dubuque	23.0	4.4%			51	Lyon	3.2	0.6%	
	5	Linn	20.8	4.0%			52	Benton	3.2	0.6%	
	6	Lee	18.4	3.5%		FEWER THAN MEDIAN #	53	Cherokee	3.0	0.6%	
	7	Woodbury	13.4	2.6%			54	Franklin	3.0	0.6%	
	8	Webster	12.4	2.4%			55	Jackson	2.8	0.5%	
	9	Wapello	11.2	2.2%			56	Sac	2.8	0.5%	
	10	Hamilton	11.0	2.1%			57	Union	2.8	0.5%	
	11	Hardin	11.0	2.1%			58	Mahaska	2.8	0.5%	
	12	Johnson	10.6	2.0%			59	Keokuk	2.6	0.5%	
	13	Marion	9.0	1.7%			60	Monroe	2.6	0.5%	
	14	Des Moines	8.2	1.6%			61	Dickinson	2.6	0.5%	
	15	Cerro Gordo	8.2	1.6%			62	Kossuth	2.4	0.5%	
	16	Pottawattamie	8.0	1.5%			63	Shelby	2.4	0.5%	
	17	Montgomery	7.6	1.5%			64	Van Buren	2.4	0.5%	
	18	Jasper	6.8	1.3%			65	Wayne	2.4	0.5%	
	19	Clinton	6.4	1.2%			66	Jones	2.4	0.5%	
	20	Poweshiek	6.2	1.2%			67	Harrison	2.4	0.5%	
	21	Marshall	6.2	1.2%			68	Hancock	2.2	0.4%	
	22	Floyd	6.0	1.2%			69	Mitchell	2.2	0.4%	
	23	Emmet	5.6	1.1%			70	Wright	2.2	0.4%	
	24	Butler	5.4	1.0%	Mean * County Count 5.3		71	Calhoun	2.0	0.4%	
	25	Story	5.4	1.0%			72	Fremont	2.0	0.4%	
MORE THAN MEDIAN #	26	Appanoose	5.2	1.0%			73	Palo Alto	2.0	0.4%	
	27	Page	5.0	1.0%			74	Taylor	2.0	0.4%	
	28	Cedar	4.8	0.9%			75	Carroll	1.8	0.3%	
	29	Tama	4.8	0.9%		LEAST # OF HOSPITALIZATIONS	76	Delaware	1.8	0.3%	
	30	Bremer	4.8	0.9%			77	Greene	1.8	0.3%	
	31	Sioux	4.6	0.9%			78	Humboldt	1.8	0.3%	
	32	Muscatine	4.2	0.8%			79	Iowa	1.8	0.3%	
	33	Buena Vista	4.2	0.8%			80	Mills	1.8	0.3%	
	34	Buchanan	4.0	0.8%			81	Adair	1.6	0.3%	
	35	Monona	4.0	0.8%			82	Winnebago	1.6	0.3%	
	36	Boone	4.0	0.8%			83	Madison	1.6	0.3%	
	37	Warren	4.0	0.8%			84	Adams	1.4	0.3%	
	38	Cass	3.8	0.7%			85	Allamakee	1.4	0.3%	
	39	Clayton	3.8	0.7%			86	Audubon	1.4	0.3%	
	40	Winneshiek	3.8	0.7%			87	Grundy	1.4	0.3%	
	41	Henry	3.6	0.7%			88	Clarke	1.2	0.2%	
	42	O'Brien	3.6	0.7%			89	Ida	1.2	0.2%	
	43	Plymouth	3.6	0.7%			90	Guthrie	1.2	0.2%	
	44	Pocahontas	3.6	0.7%			91	Davis	1.0	0.2%	
	45	Dallas	3.6	0.7%			92	Decatur	1.0	0.2%	
	46	Clay	3.6	0.7%			93	Lucas	1.0	0.2%	
	47	Washington	3.4	0.7%			94	Louisa	1.0	0.2%	
							95	Jefferson	0.6	0.1%	
							96	Ringgold	0.6	0.1%	
							97	Worth	0.6	0.1%	
							98	Osceola	0.2	0.0%	
							99	Howard	0.0	0.0%	

Average Annual: State of Iowa		520	99%
State Statistics:	Mean	5.3	Range of Counts (0 - 50)
	Median	3.2	
	+1 Std Dev	12.3	
	-1 Std Dev	0	

*The *median* **count of hospitalizations for all Iowa counties is the count above and below which half of all 99 counties' counts fall. The** *mean* **county count is the** *average* **count for all 99 counties (i.e., sum of all counties' counts of hospitalizations/99 counties).**